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## SOVIET CONFERENCE ON MICROHARDNESS

The Institute of Machine Studies of the Academy of Sciences and All-Union Scientific and Technical Society of Instrument Building (Unitropribor) arranged a Conference on Microhardness to discuss two major subjects: methods and equipment for microhardness testing, and application of the microhardness method in scientific research and in production.

Professor P. Ye. D'yachenko, opening the session, stated that the major subjects of the conference were exchange of experience among laboratories using the method of microhardness, and the establishment of measures necessary for further development and propagation of this method. He indicated that the Institute or Machine Studies and the plant for fabricating testing instruments played an important role in the development of the microhardness method and its wide application in the practice of scientific research and industrial control.

The first period of the session on the subject of methods and equipment included nine reports.

Engineer N. I. Bychkova, representing a plant which produces microhardness testers, described the basic features of a new PMT-3 instrument V. A. Yegorov, representative of the Moscow State Institute of Measures and Measuring Instruments, said that preliminary tests of the instrument showed good results and stated that the error of instrument readings increases with a decreasing diagonal of indentation.

O. S. Bochvar, of the Moscow Aviation Technological Institute, in her report, "Investigation of Methods for Preparing Microhardness Testing Specimens," using numerical data on testing with small loads, demonstrated the dependence of the microhardness value on the method of surface preparation (polishing, etching), and the effect of the time period between the moment of specimen preparation and the test.

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The report, "Microhardness Testing in the Region of Indentations With a Diagonal Shorter Than a Micron," delivered by Professor M. M. Khrushchev and Ye. S. Berkovich, dealt with a new method for measuring small indentations with an electron microscope.

B. D. Gogoberidze and N. A. Kopatskiy, LITMO, (Leulograd Institute of Precision Mechanics and Optics), in their report, "Concerning the Nature of the Polished Surface of Monocrystals," discussed the investigation of the polished surface of rock salt. Results showed that the "hardness-load" curve for the case of the polished surface is being plotted higher than for the surface of natural cleavage.

Academician N. T. Gudtsov and M. G. Lozinskiy (Institute of Metallurgy, Academy of Sciences) delivered a report entitled "Vacuum Instruments for Measuring Hardness and Microhardness at High Temperatures."

The second part of the session comprised 15 reports on the application of the  $micronardness\ method$ .

Special theoretical and practical significance was attributed to the reports "The Microhardness of Double High-Melting Carbides," by A. Ye. Koval'skiy and L. A. Petrova, and "Measuring the Microhardness of Zirconium Carbide in Relation to the Carbon Content," by A. Ye. Koval'skiy and P. G. Makarenko. Both reports presented numerous data on studying the systems of complex carbides and demonstrated the practical significance of the microhardness testing method for the solution of essential industrial problems.

The problems of metal structure were the subject of several reports: "On Investigation of Intradendritic Liquation by the Method of Microhardness," by D. A. Petrov and I. A. Raykovskaya (Institute of General and Inorganic Chemistry, Academy of Sciences), "Application of the Microhardness Method for Studying the Structure Constituents of Cast Alloys," by A. M. Korel'kov and E. S. Kadaner (Institute of Metallurgy, Academy of Sciences), and others.

Interesting information was given by N. Yu. Ikornikova (Institute of Crystallography, Academy of Sciences) on the method for measuring the microhardness of synthetic corundum, on the determination of its brittleness by this method, and on establishing the relationship between optical anomalies and microbrittleness of corrandum.

Developing this information, V. I. Yegorov, NEIChesprom (Scientific Research Institute of the Clock and Watch Industry), made a report, "Application of the Microhardness Method in the Fabrication of Frecise Technical Stones and in the Watchmaking Industry," which highly evaluated the role of the microhardness method in quality control of industrial production.

The paper entitled "Measuring the Microhardness of Coals and Coke," by Ye. M. Tayts and Z. S. Tyabina (Institute of Minerals Fuels, Academy of Sciences), illustrated the introduction of the microhardness method into another field of science.

The conference sdopted a resolution noting the wide application of the microhardness testing method in research work and industry, and suggesting continuation of work on improving the method and equipment.

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